

ABSTRACT OF THE DISCLOSURE

In the batch process of enzyme-catalyzed reactions, a sample loss cannot be negligible, but devices according to the prior art aiming at reduction in sample loss cannot help consuming a long period of time in the reaction process. In the present invention, a chemical substance is fixed and a buffer solution is filled in a round-shaped reaction element. A given volume of air is sucked in through an air inlet and a sample solution is sucked in. In addition, a given volume of air is sucked in. Air and the sample solution, is transported sequentially into the reaction element in that order. The reaction element is filled with the sample solution, which is placed between two air layers to prevent it from mixing with the buffer solution. The sample solution between two air layers reciprocates at a given velocity of flow in the reaction element, accelerating high efficiency chemical reactions.